Listing of Claims:

1. (previously presented) An automatic vehicle equipment control system, comprising:

at least one imager comprising at least one image sensor and at least one other component selected from the group comprising: at least one temperature sensor, at least one control output and at least one low voltage differential signal transceiver;

at least one enhanced transceiver; and

at least one interconnection between said at least one imager and said at least one enhanced transceiver, wherein at least one vehicle equipment control signal is generated as a function of at least a portion of at least one image.

2. (original) An automatic vehicle equipment control system as in claim 1 wherein said image sensor and said at least one other component are formed on a common silicon wafer.

3. (original) An automatic vehicle equipment control system as in claim 1 wherein said imager further comprises at least one additional component selected from the group comprising: at least one voltage regulator, at least one image sensor logic and control circuit and at least one analog-to-digital converter.

4. (original) An automatic vehicle equipment control system as in claim 3 wherein said image sensor and said at least one other component are formed on a common silicon wafer.

5. (original) An automatic vehicle equipment control system as in claim 3 wherein said image sensor and said at least one additional component are formed on a common silicon wafer.

6. (original) An automatic vehicle equipment control system as in claim 1 said at least one enhanced transceiver comprises at least one low voltage differential signal

transceiver and at least one dual port memory.

7. (original) An automatic vehicle equipment control system as in claim 6 wherein said at least one low voltage differential signal transceiver and said at least one dual port memory are formed on a common silicon wafer.

8. (original) An automatic vehicle equipment control system as in claim 1 comprising a first image sensor and a second image sensor.

9. (original) An automatic vehicle equipment control system as in claim 8 wherein said first and second image sensors communicate with a processor over a common interconnection.

10. (original) An automatic vehicle equipment control system as in claim 1 wherein said interconnection is selected from the group comprising: hardwired, radio frequency, acoustical waves, light rays, infrared light rays, near infrared light rays, fiber optics and a vehicle bus.

11. (original) An automatic vehicle equipment control system as in claim 1 wherein said interconnection has a connector that is designed to functionally engage with a mating connector on an imager board.

12. (original) An automatic vehicle equipment control system as in claim 1 wherein said interconnection has a connector that is designed to functionally engage with a mating connector on a mother board.

13. (original) An automatic vehicle equipment control system as in claim 1 wherein said interconnection has a connector that is designed to functionally engage with a mating connector on a daughter board.

14. (previously presented) An automatic vehicle equipment control system, comprising:

an imager comprising an image sensor and at least one other component selected from the group comprising: at least one control output and at least one low voltage differential signal transceiver, wherein at least one vehicle equipment control signal is generated as a function of at least a portion of at least one image.

15. (original) An automatic vehicle equipment control system as in claim 14 wherein said image sensor and said at least one other component are formed on a common silicon wafer.

16. (original) An automatic vehicle equipment control system as in claim 14 configured to automatically control at least one piece of equipment selected from the group comprising: an exterior light, a moisture senor, a windshield wiper, a defogger, a lane departure warning, an accident avoidance system, an accident reconstruction system, an adaptive cruse control system, a security system, an occupant detection system, a cabin monitoring system, a rear vision system and a blind spot vision system.

17. (original) An automatic vehicle equipment control system as in claim 14 further comprising at least one device selected from the group comprising: an electro-optic mirror element, an electro-optic mirror element drive circuit, a vehicle bus interface, a processor, an information display driver, a telecommunications transceiver, a garage door opener, a compass sensor, a compass, an information display, a compass heading display, a temperature display, an ambient light sensor, a glare light sensor, an operator interface, an indicator and a microphone.

18. (original) An automatic vehicle equipment control system as in claim 14 wherein said imager further comprises at least one additional component selected from the group comprising: at least one temperature sensor, at least one voltage regulator, at least one image sensor logic and control circuit and at least one analog-to-digital converter.

19. (original) An automatic vehicle equipment control system as in claim 18 wherein said image sensor and said at least one other component are formed on a common silicon wafer.

20. (original) An automatic vehicle equipment control system as in claim 18 configured to automatically control at least one piece of equipment selected from the group comprising: an exterior light, a moisture senor, a windshield wiper, a defogger, a lane departure warning, an accident avoidance system, an accident reconstruction system, an adaptive cruse control system, a security system, an occupant detection system, a cabin monitoring system, a rear vision system and a blind spot vision system.

21. (original) An automatic vehicle equipment control system as in claim 18 further comprising at least one device selected from the group comprising: an electro-optic mirror element, an electro-optic mirror element drive circuit, a vehicle bus interface, a processor, an information display driver, a telecommunications transceiver, a garage door opener, a compass sensor, a compass, an information display, a compass heading display, a temperature display, an ambient light sensor, a glare light sensor, an operator interface, an indicator and a microphone.

22. (original) An automatic vehicle equipment control system as in claim 14 further comprising a processor having at least one input selected from the group comprising: a yaw sensor input, a pitch sensor input, a steering sensor input, an ambient light sensor input, a glare light sensor input, a compass heading input, a speed input, an auto/off/on input, a pedestrian/bicyclist override input, a manual dimmer switch input.

23. (original) An automatic vehicle equipment control system as in claim 14 further comprising a processor having at least one output selected from the group comprising: an exterior light output, a windshield wiper output, a defogger output, an exterior light status indicator output, an information display output, an information display driver

output, an electro-optic mirror element output and a pedestrian/bicyclist indicator output.

24. (original) An automatic vehicle equipment control system as in claim 14 further comprising at least one enhanced transceiver.

25. (original) An automatic vehicle equipment control system as in claim 14 further comprising at least one interconnection between said at least one imager and said at least one enhanced transceiver.

26. (original) An automatic vehicle equipment control system as in claim 14 comprising a first image sensor and a second image sensor.

27. (original) An automatic vehicle equipment control system as in claim 26 wherein said first and second image sensors communicate with a processor over a common interconnection.

28. (previously presented) An imager, comprising:

an image sensor and at least one other component selected from the group comprising: at least one control output and at least one low voltage differential signal transceiver, wherein said image sensor and said at least one other component are formed on a common silicon wafer, wherein at least one vehicle equipment control signal is generated as a function of at least a portion of at least one image.

29. (original) An imager as in claim 28 further comprising at least one additional component selected from the group comprising: at least one temperature sensor, at least one dark pixel, at least one guard pixel, at least one voltage regulator, at least one image sensor logic and control circuit and at least one analog-to-digital converter.

30. (original) An imager as in claim 28 further comprising a spectral filter material proximate at least a portion of pixels within said image sensor such that only those

associated light rays with desired wavelengths will impinge upon a given spectrally filtered pixel.

31. (original) An imager as in claim 28 wherein said image sensor comprises 144 columns and 176 rows of pixels.

32. (original) An imager as in claim 31 wherein said image sensor further comprises 4 rows and 4 columns of guard pixels surrounding said 144 columns and 176 rows of pixels.

33. (original) An imager as in claim 32 wherein said image sensor further comprises 4 columns of dark pixels on outer edges of said 4 columns of guard pixels.

34. (original) An imager as in claim 33 further comprising 4 columns defining a temperature sensor feature.

35. (original) An imager as in claim 34 wherein said temperature sensor feature is configured such that the associated columns are read out of the imager utilizing a format similar to pixel data.

36. (previously presented) An enhanced transceiver, comprising:

at least one low voltage differential signal transceiver and at least one memory formed on a common silicon wafer configured to communicate with an imager, wherein at least one vehicle equipment control signal is generated as a function of at least a portion of at least one image.

37. (original) An enhanced transceiver as in claim 36 further comprising at least one additional device selected from the group comprising: an incoming data logic block, a processor interface logic block, a loop back mode and a bypass mode.

38. (previously presented) An enhanced transceiver as in claim 36 further comprising at least one dual port memory, wherein said at least one dual port memory comprises greater than 32,000 bytes.

39. (previously presented) An enhanced transceiver as in claim 36 further comprising at least one dual port memory, wherein said at least one dual port memory comprises 8 bit architecture.

40. (currently amended) An imager board interconnection, comprising:

at least one low voltage differential signal transceiver defining at least a portion of the imager board interconnection, wherein the imager board interconnection is configured to operate up to at least one megabaud without emitting unacceptable electromagnetic interference.

41. (original) An imager board interconnection as in claim 40 further configured to interconnect more than one image sensor to at least one processor.

42. (previously presented) An automatic vehicle equipment control system, comprising:

an enhanced transceiver comprising at least one low voltage differential signal transceiver and at least one memory configured to communicate with an imager, wherein at least one vehicle equipment control signal is generated as a function of at least a portion of at least one image.

43. (previously presented) An automatic vehicle equipment control system as in claim 42 further comprising at least one dual port memory, wherein said at least one low voltage differential signal transceiver and said at least one dual port memory are formed on a common silicon wafer.

44. (original) An automatic vehicle equipment control system as in claim 42 further comprising an imager comprising an image sensor and at least one other component

selected from the group comprising: at least one temperature sensor, at least one control output and at least one low voltage differential signal transceiver.

45. (original) An automatic vehicle equipment control system as in claim 44 wherein said image sensor and said at least one other component are formed on a common silicon wafer.

46. (original) An automatic vehicle equipment control system as in claim 44 configured to automatically control at least one piece of equipment selected from the group comprising: an exterior light, a moisture senor, a windshield wiper, a defogger, a lane departure warning, an accident avoidance system, an accident reconstruction system, an adaptive cruse control system, a security system, an occupant detection system, a cabin monitoring system, a rear vision system and a blind spot vision system.

47. (original) An automatic vehicle equipment control system as in claim 44 further comprising at least one device selected from the group comprising: an electro-optic mirror element, an electro-optic mirror element drive circuit, a vehicle bus interface, a processor, an information display driver, a telecommunications transceiver, a garage door opener, a compass sensor, a compass, an information display, a compass heading display, a temperature display, an ambient light sensor, a glare light sensor, an operator interface, an indicator and a microphone.

48. (original) An automatic vehicle equipment control system as in claim 44 wherein said imager further comprises at least one additional component selected from the group comprising: at least one voltage regulator, at least one image sensor logic and control circuit and at least one analog-to-digital converter.

49. (original) An automatic vehicle equipment control system as in claim 48 wherein said image sensor and said at least one other component are formed on a common silicon wafer.

50. (original) An automatic vehicle equipment control system as in claim 48 configured to automatically control at least one piece of equipment selected from the group comprising: an exterior light, a moisture senor, a windshield wiper, a defogger, a lane departure warning, an accident avoidance system, an accident reconstruction system, an adaptive cruse control system, a security system, an occupant detection system, a cabin monitoring system, a rear vision system and a blind spot vision system.

51. (original) An automatic vehicle equipment control system as in claim 48 further comprising at least one device selected from the group comprising: an electro-optic mirror element, an electro-optic mirror element drive circuit, a vehicle bus interface, a processor, an information display driver, a telecommunications transceiver, a garage door opener, a compass sensor, a compass, an information display, a compass heading display, a temperature display, an ambient light sensor, a glare light sensor, an operator interface, an indicator and a microphone.

52. (original) An automatic vehicle equipment control system as in claim 44 further comprising a processor having at least one input selected from the group comprising: a yaw sensor input, a pitch sensor input, a steering sensor input, an ambient light sensor input, a glare light sensor input, a compass heading input, a speed input, an auto/off/on input, a pedestrian/bicyclist override input, a manual dimmer switch input.

53. (original) An automatic vehicle equipment control system as in claim 44 further comprising a processor having at least one output selected from the group comprising: an exterior light output, a windshield wiper output, a defogger output, an exterior light status indicator output, an information display output, an information display driver output, an electro-optic mirror element output and a pedestrian/bicyclist indicator output.

54. (original) An automatic vehicle equipment control system as in claim 44 further comprising at least one enhanced transceiver.

55. (original) An automatic vehicle equipment control system as in claim 44 further comprising at least one interconnection between said at least one imager and said at least one enhanced transceiver.

56. (original) An automatic vehicle equipment control system as in claim 44 comprising a first image sensor and a second image sensor.

57. (original) An automatic vehicle equipment control system as in claim 56 wherein said first and second image sensors communicate with a processor over a common interconnection.

58. (currently amended) A vision system, comprising:

at least one imager comprising at least one image sensor and at least one low voltage differential signal transceiver formed on a common silicon wafer;

at least one processor; and

at least one enhanced transceiver interconnected between said at least one imager and said at least one processor, said at least one enhanced transceiver comprising at least one dual port memory.

59. (original) A vision system as in claim 58, said imager further comprising at least one output.

60. (original) A vision system as in claim 59 wherein said at least one output is configured to connect to a supplemental light source.

61. (original) A vision system as in claim 59 wherein said at least one output is configured to connect to an imager heater.

62. (original) A vision system as in claim 61 wherein said at least one output is

configured to automatically operate said imager heater as a function of a temperature sensor.

63. (original) A vision system as in claim 58, said at least one processor having at least one output selected from the group comprising: an exterior light output, a windshield wiper output, a defogger output, an exterior light status indicator output, an information display output, an information display driver output, an electro-optic mirror element output and a pedestrian/bicyclist indicator output.

64. (original) A vision system as in claim 58 wherein said at least one enhanced transceiver comprises at least one memory having at least two read addresses and is configured such that at least a portion of at least two images can be accessed by said at least one processor.

65. (original) A vision system as in claim 58 wherein said at least one imager is configured to acquire at least two images in response to one command instruction.

66. (original) A vision system as in claim 61 wherein said at least one enhanced transceiver comprises at least one memory having at least two read addresses and is configured such that at least a portion of at least two images can be accessed by said at least one processor.

67. (original) A vision system as in claim 58 configured such that said at least one enhanced transceiver functions to pass command instructions from said at least one processor to said at least one imager.

68. (original) A vision system as in claim 58 configured such that said at least one enhanced transceiver functions to pass image data from said at least one imager to said at least one processor.

69. (original) A vision system as in claim 58 wherein said imager is configured to transmit a first image having a first integration period and a second image having a second integration period in response to one command instruction.

70. (original) A vision system as in claim 65 wherein said first image comprises a first spectrally filtered portion and said second image comprises a second spectrally filtered portion.

71. (previously presented) A vision system as in claim 66 further comprising a first spectrally filtered portion and a second spectrally filtered portion, wherein said processor is configured to read a first pixel from a row of said first spectrally filtered portion followed by a corresponding second pixel from a corresponding row of said second spectrally filtered portion.

72. (previously presented) A vision system as in claim 68 further comprising first and second spectrally filtered portions, a first image and a second image, wherein said processor is further configured to read a complete row of pixels from said first and second spectrally filtered portions sequentially with one pixel from the first image followed by one pixel from the second image.

73. (previously presented) A vision system as in claim 69 further comprising a first spectrally filtered portion and a second spectrally filtered portion, wherein said processor is further configured to read a first pixel from a row of said first image not within said first spectrally filtered portion followed by a corresponding pixel from a second row of said second image not within said second spectrally filtered portion.